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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,462	03/26/2004	Masahiro Fukui	60188-778	7654
7590 McDermott, Will & Emery 600 13th Street, N.W. Washington, DC 20005-3096		05/01/2007	EXAMINER PHAM, LY D	
			ART UNIT 2827	PAPER NUMBER
			MAIL DATE 05/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/809,462	FUKUI ET AL.
<b>Examiner</b>	<b>Art Unit</b>	
	Ly D. Pham	2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 20 February 2007.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 12-40 is/are pending in the application.  
4a) Of the above claim(s) 12-21 and 24-40 is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 22 is/are rejected.  
7)  Claim(s) 23 is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 26 March 2004 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. 10/085,009.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03/26/2004.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_ .

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 22 and 23 in the reply filed on 02/20/2007 is acknowledged.
2. Claims 12 – 21 and 24 – 40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse as indicated above.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chih-Hung et al. (US Pat Pub 2002/0018354) in view of Takenaka et al. (JP 10-21280).

Regarding **claim 22**, Chih-Hung et al. disclose a functional macro (fig. 2) having a plurality of terminals (as shown, fig. 2) to which interconnection lines for a plurality of bits are connected (for example, interconnection lines to data pins DQ0 – DQ63), wherein the order or arrangement of the plurality of terminals are in ascending or descending order of the bits (as shown).

Although Chih-Hung et al. did not clearly disclose the order or arrangement of the plurality of terminals is set based on a change of frequency of signals input into or output from the terminals, the feature is however taught by Takenaka et al. (according to the abstract, the setting of the pin positions and arrangement order of wires are on the basis of the toggle rate of the integrated circuit device, in which "toggle rate" is referred to as the claimed "change frequency signals input into or output from the terminals").

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the feature taught by Takenaka et al. to the disclosure by Chih-Hung et al., by ways of arranging the data-bit pins not in the order of bit significance, but is based on the I/O bit rates to/from the terminals, so that power consumption is reduced—resulting from reduction in coupling power.

***Allowable Subject Matter***

5. Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior arts of record fail to teach or reasonably suggest the functional macro of claim 22, wherein the plurality of terminals are placed so high frequency signal terminals are sandwiched by low frequency signal terminals.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
8. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02(b)).
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly D. Pham whose telephone number is 571-272-1793. The examiner can normally be reached on Monday-Thursday.  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2827

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Ly D. Pham (AU 2827)  
April 26, 2007